

XXI. *On the Laparostict Lamellicorn Coleoptera of Grenada and St. Vincent (W. Indies).* By GILBERT J. ARROW, F.E.S.

[Read October 7th, 1903.]

IN 1900 I published a paper in these Transactions dealing with the Pleurostict Lamellicornia collected by Mr. H. H. Smith in the islands of St. Vincent and Grenada. The present paper contains an enumeration of the remainder of the Lamellicornia of the same collection. The total number of species of the Laparostict families is 22, making in all 40 species of Lamellicorns now known from the islands. Of the present 22 species, 9 are known as inhabitants of the mainland of America, 2 more have been described from other islands of the Antilles, and 10 are here described as new. One of the latter, *Atenius tenebrosus*, is also a widely-distributed form and, with the exception of 3 represented by single specimens and 3 by two specimens, only 3 of the whole number did not occur in both islands; and two of these three occur elsewhere. The families dealt with in my previous paper therefore differ curiously from those now under consideration in the localization of their species.

The fauna of St. Vincent has assumed a very special interest since the volcanic catastrophe from which the island has so recently suffered, and which can hardly have failed to produce a permanent effect upon its fauna and flora. It is fortunate that so excellent a collection was brought from the island before the event, so that future comparisons will be possible which should throw valuable light upon biological problems.

I have also characterized in this paper a few Central American allied forms, as to which confusion has previously existed.

COPRIDÆ.

*Chœridium illæsum*, Harold.

This insect was found in decaying fruit and other vegetable *débris*. It was very common in St. Vincent, Grenada, and Mustique in the Grenadines. It has only

previously been recorded from Mexico, but will no doubt be found in other West Indian islands.

*Pseudocanthon chlorizans*, Bates.

A specimen was found in Mustique, and another in Union Island, in the Grenadines. This species also has only so far been known from Mexico. The green tinge is exceedingly faint, as in the specimens from Yucatan, and traceable only on the head and thorax. The elytra are quite black in all known examples except the type, found in Juquila.

The angulate inner edge of the front tibia of the male is the only substantial distinction between this genus and *Canthon*, the parallel-sided thorax mentioned by its author being only an optical effect produced in a particular position of the specimen.

*Urosys Vincentiæ*, sp. n.

Parum elongatus, cupreo-niger, nitidus, capite polito, sat crebre punctato, oculis supra angustis, clypei margine setoso, medio bidentato; prothorace levissime punctato, lateribus valde angulatis, profunde sulcatis, sulco ad basin attingente; elytris extus carina integra apice paulo depressa circumdatis, striatis, striis laud perspicue punctatis; pygidio polito convexo, basi profunde bi-impreso; tibiis anticis gracilibus, tridentatis, dentibus omnibus multo post medium positus.

Long. 3-4 mm.

*Hab.* ST. VINCENT, Cumberland.

Two specimens of this minute species were found beneath rubbish on a damp rock near the sea. It has the form and size of *U. pygmaeus*, Harold, but the upper division of the eyes is narrow, and there are no supplementary teeth on the margin of the clypeus. The disk of the latter is without any trace of transverse wrinkles. The slight depression at the suture of the carina surrounding the elytra suggests the origin of the apical processes which form such a remarkable feature of some of the larger species of this genus.

*Onthophagus Antillarum*, sp. n.

Fusco-niger, opacus, supra parce brevissime setosus, pygidio femoribusque 4 posterioribus plerumque flavis, elytris basi nonnquam flavo-maculatis; clypeo integro, leviter punctato-rugoso, maris

vertice cornubus 2 intus curvatis, cum carina connectiva circum fere formantibus, armato; prothorace minute sat regulariter punctato, antice utrinque profunde impresso, lobo crasso antico formante, postice medio leviter canaliculato, margine angulato; elytris subtiliter striatis, striis haud punctatis, interstitiis minutissime et disperse punctulatis, punctis setiferis, elytris nonnunquam minus nigris, basi vage rufo-flavo-maculatis; pygidio, abdominis lateribus, femoribusque 4 posterioribus plerumque flavis, pedum reliquis fusco-castaneis, tibiis anticis acute 4-dentatis.

Long. 6.5 mm.

*Hab.* ST. VINCENT; GRENADA, Balthazar, Mt. Gay Estate.

The armature is described from the best-developed male, in which the horns are about as long as the head and, with the connecting ridge, form three-quarters of a circle. The female is similar, but the head bears only two transverse ridges, and the thorax shows only vestiges of the anterior depressions. *O. Antillarum* is allied to *O. marginicollis*, Harold, which is similar in size and form, while the traces of yellow marking often present in the new species also point to this affinity. It is less shining, however, the striae are not punctured, and the horns of the male, although not longer, are more slender.

#### APHODIIDÆ.

##### *Aphodius luridus*, Olivier.

A single specimen of this almost universally distributed species was found on the Leeward side of Grenada.

##### *Aphodius cuniculus*, Chevrolat.

This was found in numbers in St. Vincent, Grenada, and Mustique, and is no doubt distributed throughout the Antilles. It also occurs on the American mainland.

##### *Atenius strigicauda*, Bates.

This widely-distributed species was found in numbers in St. Vincent and Grenada, and a specimen was also brought from Becquia Island. It generally occurred beneath rubbish in swampy places.

*Atænius frater*, sp. n.

*A. strigicauda* forma et magnitudo, sed differt capite crebre punctato, haud ruguloso, elytrorum interstitiis minus convexis, sparsissime punctulatis, metasterno femoribusque omnibus disperse et grosse punctatis.

Long. 5-5.5 mm.

*Hab.* ST. VINCENT, South end; GRENADA, Leeward side.

At first sight this species is indistinguishable from *A. strigicauda*, but a close examination reveals slight differences which in combination sufficiently establish its distinctness. The punctures on the head are very fine, and, though not uniformly distributed, are everywhere distinct, and do not change into wrinkles anteriorly as in *A. strigicauda*. The elytral interstices show lateral striae behind, as in that species, but unlike it the interstices are strewn with minute punctures. The evenly-punctured surface of the metasternum and middle and hind femora perhaps constitute the most evident difference between the two, these in *A. strigicauda* being smooth except for clusters of about half-a-dozen punctures on each side of the median furrow of the metasternum and at the distal extremities of the femora.

This appears to be a very local species, but considerable numbers were found at the southern end of St. Vincent and a few specimens in Grenada (Grand Etang Lake and Mount Gay Estate). It occurred under the same conditions as the allied form, but in different places.

*Atænius terminalis*, Chevrolat.

Numerous specimens were found in Grenada of the form referred to by Chevrolat as inhabiting most of the Antilles. Its apparent absence from St. Vincent is rather remarkable. All our specimens have the yellow border extending round the elytra from shoulder to shoulder.

*Atænius tenebrosus*, sp. n.

Niger, opacus, griseo-vestitus, latus, parum convexus, capite densissime rugose punctato; prothorace creberrime sed distincte punctato; elytris striatis, striis haud profunde punctatis, interstitiis subcarinatis, haud setosis; prothoracis lateribus medio fere rectis, angulis omnibus arcuatis.

Lat. 2 mm. Long. 4.5 mm.

*Hab.* GRENADA; TRINIDAD; BRAZIL, Marajo, etc.

A single specimen was found by Mr. Smith in a marshy place on Mount Gay Estate, Grenada. It agrees with a specimen in the British Museum from Trinidad and others from Brazil bearing the unpublished name *tenebrosus*, Reiche. The species is very near *A. imbricatus*, Melsh., which has been recorded from Cuba by Harold under the name of *A. sordidus*. *A. tenebrosus*, however, is a broader insect, more finely and densely punctured on the head and thorax, and without visible setæ upon the elytral costæ.

*Atanius Vincentia*, sp. n.

Valde elongatus, nigro-piceus, opacus, clypeo, prothoracis margine antica pedibusque rufis; clypeo bidentato, dentibus minutis, capite antice nitido, transversim rugato, postice crebre punctato; prothorace minute, fere conflunter, punctato, angulis omnino oblitteratis, sulca obsoleta media postice impresso; elytris anguste carinatis, ubique punctato-rugoso.

Long. 3.3 mm.

*Hab.* ST. VINCENT, Leeward side and South end.

This was always found near the sea, beneath vegetable debris. It is a species closely allied to *A. sculptifrons*, Bates, and *A. Steinheili*, Harold—especially the former. It is more elongate, however, the posterior angles of the thorax are completely obliterated, and the head is more coarsely sculptured and shining.

*Atanius polyglyptus*, Bates.

A number of specimens agreeing with the variety *jalapensis* of Bates occurred both in St. Vincent and Grenada. They were also found under rubbish, but generally beside forest streams at an elevation of 250—1000 feet.

*Atanius gracilis*, Melsh.

Several specimens were found at Balthazar and Mount Gay Estate in Grenada, and one in St. Vincent. The species occurs throughout the Western Hemisphere.

*Atanius*, sp.

A single specimen from Mustique Island of a species near *A. polyglyptus*, but probably new.

*Psammobius parvulus*, Chevr.

This minute insect was very commonly found on the wing at sunset in both St. Vincent and Grenada. The species was described from a single Cuban specimen which I have not been able to trace, but M. Oberthür has kindly sent me specimens from Cuba which there is no reason to doubt belong to Chevrolat's species, and I am not able to distinguish our series from these. The *Psammobius* from Mexico and Guatemala identified by Bates as *P. parvulus*, although closely related, is not the same, and the Amazonian specimens also ascribed to it by him, and which I have seen in M. Oberthür's collection, represent a third species.

For the sake of clearness it may be well to re-name the Central American form shortly described by Bates, which I will call *P. Batesi*. This is generally larger than *P. parvulus* and considerably stouter, the width of the elytra together being greater than that of the thorax, whereas they are of equal width in Chevrolat's species, producing a very characteristic linear form. The head and prothorax are less markedly darker than the elytra in *P. Batesi*, and the thoracic puncturation is sparser.

*Saprosites grenadensis*, sp. n.

*S. parallelo* affinis sed paulo minor, minus grosse punctatus. Rufopiceus, capite prothoraceque magis rufescentibus, prothorace haud crebre sed irregulariter punctato, elytris profunde striatis, striis fundo punctatis, metasterno late canaliculato, segmentis abdominalibus subtus minutissime punctatis; tibiis anticis extus minute serratis, dentibus tribus majoribus.

Long. 4 mm.

*Hab.* GRENADA, Grand Etang (1900 feet).

A single specimen only was found under the bark of a decaying log. Its colour is distinctly red on head and prothorax, but this is probably not a constant specific feature. It differs from *S. parallelus*, Harold, of Central and South America, by its smaller size and finer puncturation. The elytral striæ are deeper, and the punctures of which they are formed less distinctly traceable. The abdomen, which is smooth in *S. parallelus*, is very thickly and finely punctured. As in the other species, there is a minute tooth between the two upper of the three large teeth of the anterior tibia.

ORPHNIDÆ.

*Ægidium vincentiæ*, sp. n.

Parum elongatum, nigro-piceum, capite crebre punctato, clypeo antice leviter acuminato, prothorace grosse punctato, (♂, medio longitudinaliter excavato, minus dense punctato) lateribus valde arcuatis, grosse crenulatis, setigeris, postice perspicue marginato; scutello laevi, modice elongato; elytris vix quam capite et prothorace longioribus, lateribus ubique curvatis, haud costatis, dense strigose punctatis, punctis setigeris.

Long. 11 mm.

*Hab.* ST. VINCENT, La Souffrière Volcano, Petit Bordelle Valley, 1000—2500 feet.

Two specimens, one of each sex, were found under logs. The male is probably almost at the minimum development. The species is near *Æ. parvulum*, Westw., but rather more elongate, although considerably shorter than *Æ. colombianum*, Westw. The elytral costæ have almost entirely vanished. The sides of the prothorax are much more distinctly and regularly crenated than in *Æ. parvulum*, and the flattened hind margin is broader.

It must be noted here that the Central American insects described by Bates as varieties of *Æ. colombianum* are quite distinct specifically from that form. Both sexes are smaller and relatively shorter, much more strongly punctured, especially upon the head and metasternum, and with a less narrow and parallel-sided scutellum. In the male the thorax is almost rugosely punctured, whereas in Westwood's species it is polished and shining. Although in the latter there are large scattered punctures in the dorsal cavity, they are of a different nature, and do not interfere with the smoothness of the surface.

*Æ. colombianum* seems to inhabit Western South America as far south as Chili, from which country there are two female specimens in our collection which cannot be distinguished from it. The Central American species ranges from Nicaragua to Bogota. It should be called *Æ. cribratum*, that name having been given to the typical specimen figured by Bates as a variety of *Æ. colombianum*.

It is curious that a remarkable sexual characteristic of these insects has been overlooked, although Westwood has figured the structure of the genus in such detail. The front tibia of the female has three external teeth and a very strong short spine internally. In the male this spine

is wanting, but is replaced by a supplementary tooth anterior to the others and directed internally, so that the tibia becomes a broad digging instrument, recalling the same member in the mole-cricket.

## HYBOSORIDÆ.

*Celodes nigripennis*, sp. n.

Castaneo-rufus, elytris nigris; clypeo breve, fere rugoso, fronte polito, paulo tumido; prothorace minutissime et sparsissime punctato (♂ antice medio leviter excavato); scutello polito; elytris lineato-punctatis, lineis haud perspicue geminatis, linea suturali profunde impressa; pedibus corporeque subtus flavo-rufis, tibiis anticis parum longis, extus haud copiose denticulatis, dentibus tribus majoribus, quorum medio maximo.

Long. 4.5 mm.

*Hab.* ST. VINCENT, Leeward side.

The species of *Celodes* are very much alike in their general form and appearance, and require careful examination to distinguish them. *C. nigripennis* is a small species about the size of *C. parvulus*, Westw., but besides the difference in the colour of the elytra these are rather more finely and uniformly punctured, the rows of punctures being less evidently paired. The clypeus is short, not much narrowed anteriorly, and shining, but not smooth. The anterior tibia is not elongated, the apical tooth is short and rounded, and the minute denticulations are few.

## TROGIDÆ.

*Trox suberosus*, Fab.

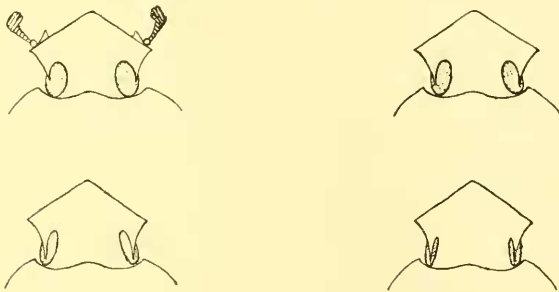
Specimens of this were brought from St. Vincent by Mr. Smith, who has noted it as occurring commonly in fungi. It is strange that it was not found in Grenada, as it is a very common species distributed over the greater part of the New World.

*Acanthocerus rluccens*, Bates.

The recorded range of this species is from Jalapa, in Mexico, to Panama, but it will probably be found to have a much wider distribution. Five specimens were brought by Mr. Smith from St. Vincent agreeing with the type in all essentials. The lines of punctures upon the elytra are



exceedingly faint, and the marginal line of the thorax is rather further from the anterior edge at the angles. But the species is in certain respects very variable. A remarkable peculiarity of this genus, which has not previously been noticed, is the extreme variability in size of the division of the eye situated upon the upper part of the head, which in this species diminishes from a large, almost circular disc to a mere narrow vestige, and in a larger series would probably be found to vanish altogether, as it has done in some specimens of *Acanthocerus vicarius*, Bates, which I have examined. To show how remarkable



is this peculiarity I have sketched the heads of a series of four specimens of *Acanthocerus relucens*, brought respectively from St. Vincent, Mexico, Guatemala and Honduras. As far as our materials show, individuals from the same place are similar, but there is no real segregation into geographical races, nor is the variation in the eyes correlated with the variation in other respects to which the species is subject. All the specimens of *A. relucens* from St. Vincent have the eyes well developed above. These specimens were found in different parts of the island and at different times of year.

*Clotus rufopiceus*, sp. n.

Paulo elongatus, rufo-piceus, nitidus, capite strigoso-rugoso, medio leviter elevato, clypeo antice late arcuato, medio vix angulato; prothorace crebre strigoso-punctato, undique marginato, angulis anticis productis, posticis late arcuatis; scutello parce punctato; elytris omnino punctato-striatis, postice multo profundius; pedibus late rufis, tibiis anticis acute serratis, dentibus tribus apicalibus majoribus,

tibiis intermediis et posticis latis, supra politis, subtus longitudinaliter striatis, tarsis omnibus subtus dense fulvo-pilosis.

Long. 5 mm.\*

*Hab.* ST. VINCENT, Chateaubelair, Petit Bordelle Valley ; GRENADA, Grand Etang (1900 feet).

This species has about the size and shape of *C. brunnipcs* and *C. bidens*, but is more strongly punctured. Its non-metallic deep red colour distinguishes it from all the other species known to me.

It occurred under bark and on brushwood.

*Clatvus crassicollis*, sp. n.

Niger, nitidus, prothoracis lateribus pedibusque rufopiceis, capite tumido, rugoso, medio sulca transversa curvata lævi impresso, clypeo transverse strigoso, margine arcuato ; prothorace irregulariter punctato, marginibus lateralibus (postice nonnihil extensis) valde incrassatis, linea marginali impressa completa demarcatis, margine posteriori medio fere angulato, angulis anticis et posticis curvatis ; scutello parvo, polito, epimeris mesosternalibus supra vix perspicuis ; elytris conjunctim exacte hemisphaericis, lineato-punctatis, punctis elongatis, setas albas decumbentes ferentibus, interstitiis postice et lateraliter fortiter et acute elevatis, costas interruptas formantibus, humeris tuberculiferis ; tibiis quatuor anterioribus paulo longis, anticis extus minute serratis, singulo apice dentibus duobus majoribus approximatis, intermediis leviter incurvatis (♂, intus apice fortiter curvato-producto), posticis paulo brevioribus, subcompressis, posterioribus quatuor longitudinaliter striatis.

Long. 6 mm.

*Hab.* ST. VINCENT, Morne à Garon (1500 feet).

Two specimens of this, apparently representing the two sexes, were found in rotten wood. It is a very well-marked form, which may be compared with *C. posticus*, Germ., although not closely related to that or any other known species. It is of similar colour and form to *C. posticus*, although rather larger, and the elytral costæ are similar, but much more prominent, and extending over half the total area of the elytra. The lines of punctures are fewer, and each puncture contains an elongate white scale. The most distinctive feature, however, is the

\* As these insects have been measured sometimes in the rolled-up and sometimes in the extended condition, it is necessary to say that I have given measurements of them in the condition of normal extension.

conspicuous submarginal thickening of the pronotum extending on each side from the anterior angle to about a quarter of the length of the base.

While dealing with Tropical American species of *Clootus*, I may conveniently point out that Bates has wrongly recorded *C. metallicus*, Har., from Central America. In the *Biologia Cent.-Americana* he has referred a specimen from Panama and another from Costa Rica to that species, but the two are not conspecific, nor is either *C. metallicus*. The latter was described from specimens collected by Bates at Ega, of which a series is in the British Museum. It is distinguished from both the other forms by the serrate humeral margins of the elytra, the three acutely-raised interstices at their apical end, and the narrower and more curved intermediate tibiæ, which have three or four striæ on their lower face.

The specimen from Bugaba, Panama, agrees with another from the same locality referred by Bates to his *C. viridipennis*, of which all true examples are from Chiriqui. The distinctive characters of this undescribed species are shortly diagnosed as follows:—

*Clootus bugabensis*, sp. n.

*C. viridipenne* valde affinis, differt magnitudine paulo minore, colore magis cupreo, prothoracis disco impunctato, linea marginali antice medio interrupto, tarsisque anticis tenuioribus.

Long. 5 mm.

*Hab.* PANAMA, Bugaba.

The Brazilian species which appears to have been mistaken by Bates for *C. metallicus*, Har., and from which I cannot distinguish the Costa Rican specimen mentioned above, is also characterized here:—

*Clootus acutipes*, sp. n.

*C. metallico* et *viridipenne* valde affinis, sed tibiis anticis fortiter dentatis, dentibus tribus apicalibus majoribus: tibiis intermediis paulo latis, subtus lævibus, prothorace prope lateribus solum leviter punctato; elytrorum marginibus humeralibus haud serratis, interstitiis apicalibus leviter haud acute elevatis.

Long. 7 mm.

*Hab.* BRAZIL, Rio de Janeiro; COSTA RICA, Irazu.

This is no doubt a widely-distributed species.

In conclusion I describe, supplementary to my previous paper, a Pleurostict species belonging to a genus of Melolonthidæ not hitherto recorded from the West Indian Islands, a single representative having been found in Mr. Smith's collection since the publication of my enumeration of the Pleurostict Lamellicornia.

*Faula insularis*, sp. n.

Ferruginea, prothorace nigro-maculato, elytris paulo infuscatis, capite supra granuloso, clypeo arcuato; prothorace punctato-rugoso, macula magna media duabusque parvis lateralibus nitidis, media nigra ad margines antice et postice fere attingente, postice dilatata, pronoti lateribus valde angulatis, angulis posticis acutis, margine postica spina acuta medio instructa; scutello fere circulari, grosse punctato, antice profunde indentato; elytris ad humeros quam prothorace paulo latioribus, deinde leviter ampliatis, ante medium usque ad apices angustatis, punctato-rugosis, dense breviter erecte pilosis, vage costatis, humeris prominentibus, nitidis; pedibus gracilibus, rufis, tibiis anticis tridentatis, dente superiori ad medium posito.

Long. 10 mm. Lat. max. 5 mm.

*Hab.* ST. VINCENT, Leeward side (500 feet).

A single female specimen of this species was found. It is easily recognizable by the smooth black area shaped like a vine-leaf occupying the centre of the prothorax. In the shape of the scutellum and the sharp tooth in the middle of the hind margin of the thorax, which fits into the deep notch in the former, it resembles *Ceraspis* and *Ancistrosoma*, but it has the typical form and size of *Faula* as well as the entire claws distinctive of that genus.